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Reviewed Article:

Tarquinia's Tablets: a Reconstruction of Tablet-Weaving Patterns found in the Tomb of the Triclinium

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Within textile Archaeology several key Etruscan sites provide experimental archaeologists with ample evidence for research and recreation. This project aims to look a the textile patterns themselves, and how these weavers might have created the images found on famous Etruscan paintings. Through looking at the Italic images of their own clothing alongside surviving textile fragments modern archaeologists can try to understand ancient

weavers and their process of tablet weaving. Five tablet-woven patterns were chosen from Etruscan paintings with this approach in mind. These patterns were based off of the images from the Tomb of the Triclinium and the surviving textile fragments from Verucchio, providing a possible guide for future research and speculative pattern reconstruction.

> These patterns were created to further the conversation on Etruscan textiles and tablet-weaving. All of them could be improved upon, or other tablet-woven patterns could be created with the same paintings from the tomb of the Triclinium. Then the entirety of the Tomb of the Triclinium could be examined through tablet-weaving and other experimental archaeology.

Introduction

The revival of tablet-weaving and its study has been primarily focused on Northern European designs from the Iron Age to the medieval period. These designs are very impressive and include opulent features such as wide weaves using dozens of tablets, dizzying patterns, and the inclusion of gold thread and silk. Iron Age Northern Italian and Mediterranean tablet-weaves were used in many of the same applications as their Northern European counterparts, but less research has been on the tablet-weaves originating from these areas. The designs for these patterns survive in the art and architecture of the Mediterranean. This experiment takes the surviving art, depicting clothing from the Tomb of the Triclinium in Tarquinia, and reconstructs both the patterns and the tablets depicted. The few surviving tablet-woven fragments from Etruria will help fill in the gaps of knowledge, alongside other textile studies from the Mediterranean and Northern Europe. This starts with spinning thread on spindles with whorls, recreating the proper thread width and ends with finished tablet-weaves and published patterns. In reconstructing these few patterns and tablets, the door can be opened for more Etruscan and Classical study and tablet-weaving reconstructions to join the well-developed experimental archaeology of Northern European textiles.

Verucchio Necropolis and Visual Depictions of Etruscan Fashion

The Etruscans and their civilization are a well-documented mystery. They are described by the Greco-Romans after their decline, but there is a limited amount of information that comes from the Etruscans themselves. The bulk of our knowledge comes from their necropoli and tombs, where a handful of textiles were successfully preserved and studied (Cutler, Demova and Gleba, 2020, p.2). This paper primarily examines two historical sites: the Tomb of the Triclinium in Tarquinia, and the Verucchio Necropoleis, which lie near the modern cities of Tarquinia in Central Italy and Verucchio on the Adriatic plain respectively.

The Tomb of the Triclinium is a 5th Century Etruscan tomb which depicts a dining scene. The Tomb is a single room with three walls painted with figures, and a painted roof that mimics

Etruscan decoration and architecture (Steingräber, 2006, pp.134-139). There is a significant amount of data and information contained in the Tomb of the Triclinium; and due to the scope of this project the entire tomb and its patterns cannot be documented here. For this experiment the left and right wall of the Tomb of the Triclinium is the focus, and all of the textile patterns will be based on the depictions of tablet-woven textiles from those walls. Even then, this is a case study of a few of the designs on those walls, as each figure depicted has a number of tablet-woven designs on their clothes (See Figure 1 and 2).

The second historical site, the Etruscan tombs in Verucchio, is an Etruscan burial site from the 8th and 7th century BCE. There are similarities between the depictions and archaeological finds in Verucchio, and the ones painted in Tarquinia centuries later (Stauffer, 2019, p.243). Carlo Rupsi's depiction of the Tomb of the Triclinium is also fundamental to this research, as he makes the images and patterns clearer in his illustration (Steingräber, 2006, pp.138-139; Knudsen, 2019, pp.256-257; Stauffer, 2019, p.249). Additionally, Verucchio has a number of surviving textiles that were remarkably preserved, such as in Tomb 89 and 85 (Stauffer, 2019, p.243). Many of the surviving pieces include tablet-woven fragments, giving us valuable information on the threads, colours, tension, and location of tablet-woven bands in Etruscan garments (Cutler, Demova and Gleba, 2020, p.18). For this project the Verucchio site and its textiles will supplement the patterns on the Tomb in Tarquinia, but the main focus will be images from Tarquinia (Knudsen, 2019, pp.256-7; Stauffer, 2019, p.249). The combination of these two sites provides a basis for recreating the tablet-weaves: Verucchio provides textile archaeology, and the Tomb of the Triclinium provides a look at Etrusccan textiles as they would have been used and worn.

While there are differences between Etruscan clothing and the clothing of the southern Mediterranean, there are also many similarities. During the 5th and 4th Centuries BCE, the period in which the Tomb of the Triclinium was created, Etruscan culture did start to include a few aspects of Greek culture (Borrelli and Targia, 2004, p.64; Steingräber, 2006, pp.134-138; Gleba, 2017, p.1218). An example of this Etruscan indigenous textile are the shawls and clothes depicted on several figures in the Tomb of the Triclinium, and recovered in Verucchio (Heurgon, 2002, pp.174-175; Steingräber, 2006, pp.134-139; Stauffer, 2019, p.248). This semi-circular shawl is worn with the majority of the fabric covering one's front and torso, with the tails draped behind in an iconic style. This style of shawl is also seen in the significantly older Verucchio site on Mantle 1 and 2 (Stauffer, 2019, pp.247-248). The variety of triangle patterns are part of indigenous Etruscan fashion. Similar patterns often show up in other Etruscan art including in the Tomb of the Triclinium (Steingräber, 2006, pp.134-139; Gleba, 2017, p.1214). These patterns and designs are more than pure data and geometry, they can show us what designs are important or desired by the Etruscans and how they might have made them (Harlow and Nosch, 2015, pp.1-10).

Tools

Many tools are used in order to spin thread and tablet-weave it into a complete piece. For this experiment the author started with carded yarn, or wool that has been scoured, combed, and sorted into a thick roving, but not yet spun into a yarn. From this point, the roving was spun by the author with two hand spindles. The spindles are made of hardwood spindle rods which were hand carved by the author, and purchased recreation terracotta spindle whorls and can be seen in Figures 3 and 4 (Kissell, 1918, p.236; Kania, 2013, pp.10-11). The weights for the whorls, 14 grams, are consistent with various archaeological finds from Northern Italy (Meyers, 2013, p.247; Gleba, 2019, p.235; Cutler, Demova and Gleba, 2020, pp.6-7,10-13). The size of spindle whorls does vary, and while there is a correlation between the weight of the spindle and the fineness of the thread, Katrin Kania's experiment has found that the skill of the spinner is a more important factor in thread production (Kania, 2013, pp.204-226). Spindle whorls are often some of the best-preserved spinning tools, so they can easily be compared against a variety of extant examples.

Unfortunately, with the majority of the tools necessary for this experiment, that is not the case (Cutler, Demova and Gleba, 2020, pp.5-7). The spindle rods used were made from hardwood by the author. They measure 27.3 cm long and 9 g for the cherry rod, and 22.6 cm long and 7.2 g for the maple. These lengths were chosen based on functionality, as well as archaeological finds from the Sant Omobono Sanctuary from the 6th Century BCE, where the rods measure between 16-30 cm (Gleba, 2019, p.235).

With the wool spun into a two-ply yarn with a diameter 0.3 mm- 0.4 mm, then the work of tablet-weaving begins. These tools, in particular, rarely survive. The most quintessential pieces of tablet-weaving are the tablets or cards themselves. Tablets are small and thin objects, typically square, with a hole in each corner (Meyers, 2013, pp.257-258). Other shapes have been found, such as triangular, hexagonal, and octagonal, however these shapes were not used in Etruscan textiles (Goslee, 2013, pp.32-44). The tablets used in the experiment are 6.3 cm by 6.1cm by 2.4 mm pieces of oak-wood. This is one of the standard sizes used in modern tablets (See Figure 5) (Knudsen, 2019, p.254). Several square tablets, made out of both wood and bone, have been recovered from Etruria. These finds are smaller than the tablets used in the experiment, however there are not enough artifacts found to determine an average size (Knudsen, 2019, p.259). Other European and Roman finds show a variety of sizes and materials (Hopkins and Kania, 2018, pp.36-40). It is important to note, however, the size of the tablets does not change the final weave.

To use the tablets, a warp thread is put through each of the corner holes, pulling the thread through the left side of the tablet to the right (See Figure 6). This is called Z-threading. S-threading is pulled from the right side to the left side. The warp threads are secured, ensuring that each tablet is oriented correctly. Then the tablets are used by rotating and twisting the four threads at the same time to make a column and change the pattern of the weave (Goslee, 2013, pp.32-44; Hopkins and Kania, 2018, pp.31-32; Cutler, Demova and Gleba, 2020,

p.18). The weft is carried by a shuttle. The shuttle used in tablet-weaving doubles as a weaving knife or beater. One side of the shuttle has an edge for pushing the fibers down (Bazzanella, 2019, p.207). Rotate the tablets according to the pattern, put the weft through and tighten the weave, then rotate and repeat. Tablet-woven fabrics are referred to as being so many tablets wide, depending on how many tablets were needed to create the fabric.

Tablets can be woven vertically on a warp weighted loom, with weighted spools holding the warp threads (Knudsen, 2019, pp.259-260). It can also be done horizontally as a form of backstrap weaving. Linda Foxhall theorizes that the backstrap method was more common, as no image of a tablet loom exists from antiquity (Brown University, 2016). The backstrap method was used in this experiment, both for its historical significance in the Mediterranean and because this is the method that the author is proficient in (Siennicka, Rahmstorf and Ulanowska, 2018, pp.3-4). Backstrap weaving requires a rod to tie the warp threads onto, and a strap to tie that rod around the weaver's torso. The other end of the warp threads is then tied onto something stable, and the weaving can commence (Waddington, 2009). The backstrap loom used in this experiment was a smooth stick with a previously tablet-woven band tying it around the author. The other end of the warp threads was tied off to a heavy object, in this case a couch (See Figure 7).

The final, and least used tools were a bone needle and shears. The shears are not recreations, but follow the morphology of ancient shears (Gleba, 2019, pp.234-235; Gleba and Mannering, 2019, p.7; Cutler, Demova and Gleba, 2020, p.18). The shears were used to measure the threads and cut them off the backstrap. The bone needle was used to weave in any loose ends or pick at specific threads. Both can be seen in Figure 8.

Thread used for Tablet-Weaving

Spinning for such an experiment must take into account the fiber, thread size, weight, and the time required to spin the thread. In order to achieve results consistently close to Etruscan tablet-weaving, the author has spun all the thread that was used for the project on the spindles documented in Figure 3 and Figure 4. Sheep's wool was not the only material available to the Etruscans, they also had access to linen, and other plant-based fibers (Carroll,1973, pp.334-336; Gleba, 2019, pp.218-226). Wool was chosen because of the author's comfort with the fiber and the archaeological evidence. Linen and wool were the predominant fibers in Etruria, however the tablet-woven fragments from Verucchio were entirely wool (Gleba, 2019, pp.219-227). Wool tends to preserve better than linen or other plant-based fibers, so their usage by Etruscans cannot be minimized or discounted, however wool is a material that can be verifiably linked to a variety of Etruscan textiles in Verucchio and other sites (Stauffer, 2019). The mantels that were recovered from Verucchio were made of sheep wool, and a majority of the textiles recovered from there include wool tablet-weavings that were incorporated into the hem (Gleba, 2017, p.1207; Stauffer, 2019, pp.244-247). For these reasons wool was the material chosen for this experiment. The thread for the

experiment was spun out of pure sheep wool from two main rovings, a blue Leicester wool that is naturally dark brown to black, and a cream or off-white sheep's wool that came from an unspecified breed.

In ancient Etruria many other colours were often used, including blue which is documented in Verucchio (Stauffer, 2019, pp.249-250). From the Verucchio site and the depictions of Etruscan wall art found in Tarquinia, the tablet-weaves themselves often are a contrasting colour to the main textile; i.e. a red cloak with a blue tablet-woven hem (Steingräber, 2006, pp.138-139; Stauffer, 2019, pp.249-250). Madder dye, white, and dark brown were chosen specifically to mimic the colours from the Tomb of the Triclinium in Tarquinia and the site at Verucchio (Steingräber, 2006, pp.20-21,133-139; Stauffer, 2019, p.250). 76 grams of yarn was dyed with madder root dye and potassium alum sulfate after it was spun. The addition of the mordant, potassium alum sulfate, while not confirmed in the ancient world, creates a much more stable dye than the madder would have had on its own. In this case the author supplemented the historical accuracy with modern products for the sake of the longevity of the final product. Madder has been well documented as a dye in the Mediterranean (Martelli, 2014, pp.122-123; Canavan, 2015 , p.115; Spantidaki, 2016, p.63,79,87; Gleba, 2019, pp.224-225). The particular madder dye for this experiment turned the yarn an orange or a scarlet colour. Natural dying is not entirely predictable. The extant finds were more of a true red than was achieved in this experiment. This could be due to the amount or type of the mordant, the madder itself, temperatures, pH, or a variety of other factors (Carroll). The main purpose of dyeing the thread was to show a colour difference in the patterns using a dye that the Etruscans themselves used. The wall paint used in the Tomb of the Triclinium would also be made out of a different pigment and therefore would not match dye colours perfectly (Steingräber, 2006, pp.20-21). The colour, while not matching the paint in Triclinium, does show this contrast well. Some of the yarn used in all three of the colours is depicted together in Figure 9.

The next aspect, thread size, can be determined with ease due to the mantles that were recovered from Verucchio. Many of textiles recovered from northern Italy during the Archaic Etruscan period are very fine, with a standard thread width of 0.2-0.5 mm (Knudsen, 2019, pp.256-257; Stauffer, 2019, pp.247-249; Cutler, Demova and Gleba, 2020, pp.22-23). Tablet-weaving typically requires two ply threads. Because of the repeated twisting of the tablets required in tablet-weaving, a single ply thread will quickly unravel (Knudsen, 2019, pp.256-257). This weight of wool could achieve a fabric that was 20-40 threads per cm for a fine weave, to 10-20 threads per cm for coarser weaves (Gleba, 2019, p.223). This is generally common among Etruscan and Northern Italian sites, including the Verucchio site (Stauffer, 2019, pp.244-247). The tablet-woven fragments recovered at Verucchio were attached to or woven with several garments. The most common find being an Etruscan shawl that was commonly worn by men (Cutler, Demova and Gleba, 2020, pp.20-21; Steingräber, 2006, pp.138-9). These are attached at the ends of the original fabric using the garment's warp

threads. This technique creates a seamless hem for these shawls, although it was also common to see tablet-woven bands sewn on top or woven with the garment (Spantidaki, 2015, pp.36-38; Knudsen, 2019, p.249; Cutler, Demova and Gleba, 2020, pp.17-18). Fragments of tablet-weaving from Verucchio and Poggio Civitate have roughly 15 tablets, or 60 warp threads, per cm, can be achieved by thread roughly 0.3 mm-0.4 mm thick (Knudsen, 2019, pp.256-257; Stauffer, 2019, pp.247-249; Cutler, Demova and Gleba, 2020, pp.22-23). For the experiment the yarn was spun to a standard thickness of 0.3-0.4mm wide, although some deviation exists as in any handspun thread (Kania, 2013, pp.18-24). This thread took hundreds of hours of practice, both during and outside the experiment, to be able to spin. This expertise can be seen in the quality of the end product.

Thread can be spun in two directions, which are traditionally described as a z-twist or an s-twist. These twists correspond to the rotation of the spindle, with z-twist representing a clockwise motion of the spindle, and s-twist representing the counterclockwise motion (Gleba, 2017, p.1207). Both types of twists exist in Etruscan textiles, and in certain textiles they are placed together to form a pattern (Carroll, 1973, pp.334-335; Gleba, 2019, p.228). Z twist is generally more common in Etruscan textiles, but both are prominent in the surviving fabrics and there does not seem to be a reason for this preference (Carroll, 1973, pp.334-335; Gleba, 2019, p.228). The fibers spun for this project are z-twist. Since both S and Z-twists were extant in Etruscan textiles, the choice was primarily due to the author's personal comfort, and skill.

Spinning is the most time-consuming aspect of any fiberwork; especially before the invention of spinning wheels. The standard set proposed by Spantidaki is that for each hour of weaving on a warp weighted loom, 10 hours of spinning must be completed (Spantidaki, 2016, p.11). Tablet-weaving is not warp weighted weaving; but this ratio is important in understanding how these artifacts were made in antiquity. This project will not test the formula above, as this experiment's scope did not include a comprehensive record of the totality of time spent spinning. The author spun 4 grams and approximately 46 meters of white woolen thread in an hour to document the predicted hours for the rest of this project. This paper's main focus is on tablet-weaving, but the thread, and its creation/recreation are an important consideration.

Tablet-Woven Patterns, Fiber, and Dimensions

Now that the thread is spun, the next step is to find something to weave. The Tomb of the Triclinium's Left and Right Wall has many examples of tablet-woven designs, and will serve as the dataset for the experiment (See Figures 1 and 2, Steingräber, 2006, pp.138-139). This section will show the tablet-weaves created to replicate those found on the Tomb of the Triclinium Left Wall, but more importantly they will include patterns for others to recreate them (Cutler, Demova and Gleba, 2020, p.21). Many Etruscan and other Mediterranean tablet-weaving patterns were lost to time. There are efforts to recreate tablet-weaving patterns for modern weavers, but much of the current archaeology focuses on Northern European

designs. Few Etrusco-Italic tablet-woven fragments exist, and Ancient Greek examples are primarily seen in artwork rather than extant finds. By providing and recreating the patterns found in these artworks, the Greek designs can be consistently recreated and studied in order to better understand and revive the traditions of Northern Italy and the Mediterranean.

As the majority of the patterns are based on visual depictions, the number of tablets used is informed by the surviving tablet-woven bands. Tablet-weaving can use dozens of tablets to make complicated designs many centimeters wide, but the designs depicted on the Tomb of the Triclinium are more simple geometric shapes. While this fact does not inherently determine the size of the bands, extant Italic finds tend to be between 7 and 18 tablets, although this could suffer from survivor bias (Knudsen, 2019, pp.256-257; Cutler, Demova and Gleba, 2020, pp.21-23). The S and Z written on these patterns is not indicative of the way the thread was spun, but the way the thread is threaded through the tablets. On the tablet-weaving patterns shown below, the S represents warping the threads through the face that faces to the right, with the Z representing warping the threads through the face to the left (Howard, 2008, Designing the Band). In this experiment and in general, the author orients the cards with the faces that are wood burned facing the right, and the blank faces facing the left.

Almost all of these patterns follow a simple 4 forward, 4 backward pattern for twisting the tablets that continues until the weave is completed. This is represented by the darkened sections of the pattern, which shows where one needs to switch directions. Personally, the author does not change the direction of the last one or two tablets in either direction, as it can weaken the edge. Instead, the outside tablets are rotated whenever the tension is too tight on the corresponding threads. The last three patterns are shown on the wall of the Tomb of the Triclinium as a singular band that is not incorporated into another textile (Steingräber, 2006, pp.138-139). Tablet-woven bands were often used as belts, headbands, or straps as well as part of garments (Knudsen, 2019, p.249; Cutler, Demova and Gleba, 2020, pp.17-18).

All patterns were recreated using the Tablet-Weaving Draft Designer, an online tool that is irreplaceable for creating clean and precise drafts. This is a free service without copyright, which can be found in the following link. http://bazzalisk.org/tabletweave/ (Weaver and Weaver, 2021).

Filled Triangle and Circle Patterns

On the Left wall of the Tomb of the Triclinium there are 2 types of patterns that have several different variations. The two categories of patterns are repeating triangles, and circular motifs. Both have different versions with different borders and widths. These two design elements show up in a variety of different shapes, sizes, and with different additional decorations. Both shapes also show up frequently in Etruscan and European art, and their frequency has led to a variety of similar versions of the same geometric concept. One of each

of these categories was chosen to represent the visual motif. A more complete analysis of the tablet-weaving patterns found at the Tomb of the Triclinium, as well as depictions of tablet-weaving patterns throughout the ancient Mediterranean, should be undertaken.

Circle and Parallel Lines From Aulos Player (See Figures 10 and 11)

In the tomb of the Triclinium this pattern can be seen on the aulos player on the right wall (Steingräber, 2006, pp.138-139). This experiment was overall quite visually distinct, however the pattern ended up being more ovular than circular. To correct this, an amended pattern has been added that should produce a more circular image, although the original was kept to document the experiment (See Figure 12). This pattern was also one of the widest in these recreations, and is quite discernable from a distance. There are innumerable ways that this pattern could be changed and manipulated, and the circular motif itself shows up often on Etruscan textile tools (Knudsen, 2019, p.262). The pattern was not difficult to weave, and it measures 22 mm wide.

Filled Triangle and Bar pattern from Dancer (See Figures 13 and 14)

This pattern is seen on the first dancer to the left on the left wall of the Tomb of the Triclinium. The triangular motif is a common Etruscan and European geometric design, and like the other pattern the colour distinction is quite striking. The ladder pattern that is in the original design was a failure and is difficult to discern in the finished product. The triangle pattern here was very legible, and the ratio could be increased if desired, the pattern uses a 2 x 1 ratio for the height for the triangle, yet a 3 x 1 increase would also work.

The pattern depicted on the clothing of a dancer in the Tomb of the Triclinium appears to have large red triangles that borders the loom-woven fabric, and a ladder pattern on the exterior of the fabric. The Verucchio tablet-woven fragment has similar motifs. The pattern and tablet-woven band recovered in Verucchio and discussed in Knudsen's article has a pattern of triangles. This band is much wider than the one depicted on the Triclinium. This one is 35 tablets in total, 18 of which made up the triangles themself (Knudsen, 2019, pp.256-257). Its colouring is also different, in that the find does not have alternating colours in the triangles or the edge (Knudsen, 2019, p.256). That pattern is much more complicated than the one used in the experiment. It would require a highly skilled weaver as well as a substantial amount of time. This reconstructed pattern represents a different style of the triangle motif. Since it is clear that the Etruscans have many variations to the triangle pattern, the size, colour, width of the triangle itself could well be one of those variations.

Zig-Zag Tablet-weave from Tomb of the Triclinium Left Wall (See Figures 15 and 16)

This pattern was by far the most difficult and speculative to recreate in this project. The wall and paint were heavily corrupted and had an attempt at repairs during the 19th century by

Carlo Rupsi (Steingräber, 2006, pp.138-139). Rupsi restored much of the paint and original colours of the tomb and left this tablet-woven pattern in a black and white colour scheme (Steingräber, 2006, pp.138-139). Finds from Verucchio show very similar patterns made with 18 tablets, but the larger patterns in the Tomb of the Triclinium are filled, not hollow (Knudsen, 2019, pp.256-257; Cutler, Demova and Gleba, 2020, pp.21-23). In this experiment, the author used the plain dark brown and white wool in order to best conform with Rupsi and what he was able to see on the wall (Steingräber, 2006, p.138). The actual weaving of this pattern was easy overall, with relatively few tablets. One could possibly use brocade weaving to achieve a similar effect to this, as seen in the research Karen Ostheller's personal research in iron age textiles (Ostheller, 2023). However, no brocaded tablet-woven fragments have been covered in Italic sites.

Square Snake Pattern (See Figure 17 and 18)

Similar to the first pattern, this was restored with black and white colours based on the works of Rupsi (Steingräber, 2006, p.138). Both colours were available in the ancient world, but the pattern itself is more important than the individual colours. This pattern can be recreated with any two colours and it is often seen used throughout the Mediterranean by Etruscans, Greeks, Romans and others. As it is such a ubiquitous design, there was a pre-existing pattern available to start with, although some alterations were made. The base key pattern requires 12 tablets, but the band depicted on the Tomb of the Triclinium wall includes wide margins so additional tablets were added to this version. One could add many more white tablets to make even wider margins, but the main pattern will not be changed.

Pure Red Tablet-Weave (See Figure 19 and 20)

This tablet-woven band is based on the extant find from the Verucchio site, as well as the Tomb of the Triclinium. The band recovered from Verucchio on Garment 3 is 13 tablets wide and alternates between the S and Z positions to create the pattern above, with a width varying between 8-10 mm (Knudsen, 2019, pp.256-257). The colour in Verucchio seemed to be blue, but the band depicted in the Tomb of the Triclinium is a red band (Steingräber, 2006, pp.138-139; Stauffer, 2019, p.249).

The creation of this tablet-woven pattern was surprisingly difficult for two reasons. Following the information from Verucchio, this band was made only out of single ply thread. This is very rare as single threads tend to unravel as they are woven, causing the warp thread to break (Knudsen, 2019, pp.256-257). Both Knudsen and Stauffer mention the exemplary craftsmanship in the band recovered from Verucchio, as it has no imperfections and the tablets are never turned (Knudsen 2019, pp.256-258; Stauffer, 2019, p.249). The author was unable to accomplish this level of perfection and turned the tablets approximately once per every 8 passes of the shuttle, which was its own difficulty. The simplicity of the weave made it very difficult to tell how many turns in either direction the weaving had gone. If a mistake was

made, it often was not noticeable immediately because there was no visible pattern to show mistakes. This confirms the skills needed to create the original tablet-weave from Verucchio, and the difficulty of tablet-weaving without plied yarn (Knudsen, 2019, p.249).

All of these patterns require skill, even tension, and a baseline knowledge of tablet-weaving. While they are not the most complicated patterns by far, their simplicity shows errors and uneven tension very clearly. The colours, although a limited palette, are remarkably discernable from a distance, and show off the way that colour and tablet-weaving could be seen. These pieces of data could be combined with other knowledge on Etruscan clothing to provide a more complete picture of their clothing styles and culture. Mary Harlow and Marie-Louise Nosch discuss the importance of fiber work not only to ancient economies, but also cultural identity and cohesion (Harlow and Nosch, 2015, pp.1-10).

Ends, Improvements, and Conclusions

Once the tablet-weaving is finished, the tablets are removed and long warp threads are left on either end. These tails can be dealt with in three ways; they can be hemmed just like more standard weaves, or they can be braided or twisted. The tablets in the tomb of the triclinium do not show a clear preference for just one method, and the reality is that a mixture of these methods would most likely be used depending on function and preference. This aspect of finishing was not part of the initial experiment because so much would depend on what the final tablet-weave would become.

These patterns were created to further the conversation on Etruscan textiles and tablet-weaving. All of them could be improved upon, or other tablet-woven patterns could be created with the same paintings from the tomb of the Triclinium. Then the entirety of the Tomb of the Triclinium could be examined through tablet-weaving and other experimental archaeology. One could also research the process of attaching or weaving tablet-weaving to warp weighted weaving, as Etruscans seemed to have three different ways to attach them (Knudsen, 2019, p.259; Cutler, Demova and Gleba, 2020). And more fragments of Etruscan textiles could be uncovered, recategorized, or researched. Experimental archaeology, alongside interdisciplinary approaches to archaeology can and does provide scholars with a better understanding of a culture, their values and daily lived experiences. Especially in cases of cultures like the Etruscans, where extant textiles are relatively rare, depictions of their clothing and fashion can aid scholarship.

When the visual depictions of textiles and the surviving archaeological finds are combined, they can be compared, studied, and recreated in ways that they could not be on their own. Without researching tablet-weaving, the geometric patterns in the Tomb of the Triclinium would be misinterpreted. Without seeing the Tomb of the Triclinium, the tablet-woven fragments at Verucchio would not be contextualized in the broader canon of patterns that the Etruscans employed. Finally, this project is not the only version of the images seen on the

Tomb of the Triclinium: one could see the exact same paintings and come up with a myriad of other patterns. At the very least this can be seen in the tomb of the Triclinium itself, which has multiple versions of the same motifs (Steingräber, 2006, pp.138-139). The point of these patterns is to supplement our existing textile fragments with visual depictions of clothing and provide these patterns for future recreations of Etruscan textiles. As we further improve our understanding of their textiles, more knowledge can be understood about their culture, daily life, and aesthetic preferences.

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Keywords tablet weaving
textile

Country Italy

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FIG 1. THE LEFT WALL OF THE TOMB OF THE TRICLINIUM. THE CLOTHING ON THESE FIGURES SHOWS AN ABUNDANCE OF TABLET WEAVING PATTERNS. ©MUSEO NAZIONALE ETRUSCO DI VILLA GIULIA. ARCHIVIO FOTOGRAFICO. FOTO MAURO BENEDETTI.

FIG 2. THE RIGHT WALL OF THE TOMB OF THE TRICLINIUM. THE CLOTHING ON THESE FIGURES SHOWS AN ABUNDANCE OF TABLET WEAVING PATTERNS. ©MUSEO NAZIONALE ETRUSCO DI VILLA GIULIA. ARCHIVIO FOTOGRAFICO. FOTO MAURO BENEDETTI.

FIG 3. THE MAPLE SPINDLE. PHOTO BY: RJ PALMER

FIG 4. THE CHERRY SPINDLE. PHOTO BY: RJ PALMER

FIG 5. ALL 20 TABLETS USED IN THIS PROJECT, DIVIDED INTO TWO GROUPS OF 10. THE WOODBURNING WAS MADE BY THE AUTHOR IN ORDER TO FOLLOW THE TRADITIONAL A-D PATTERN. PHOTO BY: RJ PALMER

FIG 6. THIS IMAGE DEPICT THE THREADING THE TABLETS BY PULLING YARN THROUGH EACH HOLE. THE LEFT TABLET IS Z THREADED WHILE THE RIGHT IS S THREADED. PHOTO BY: RJ PALMER

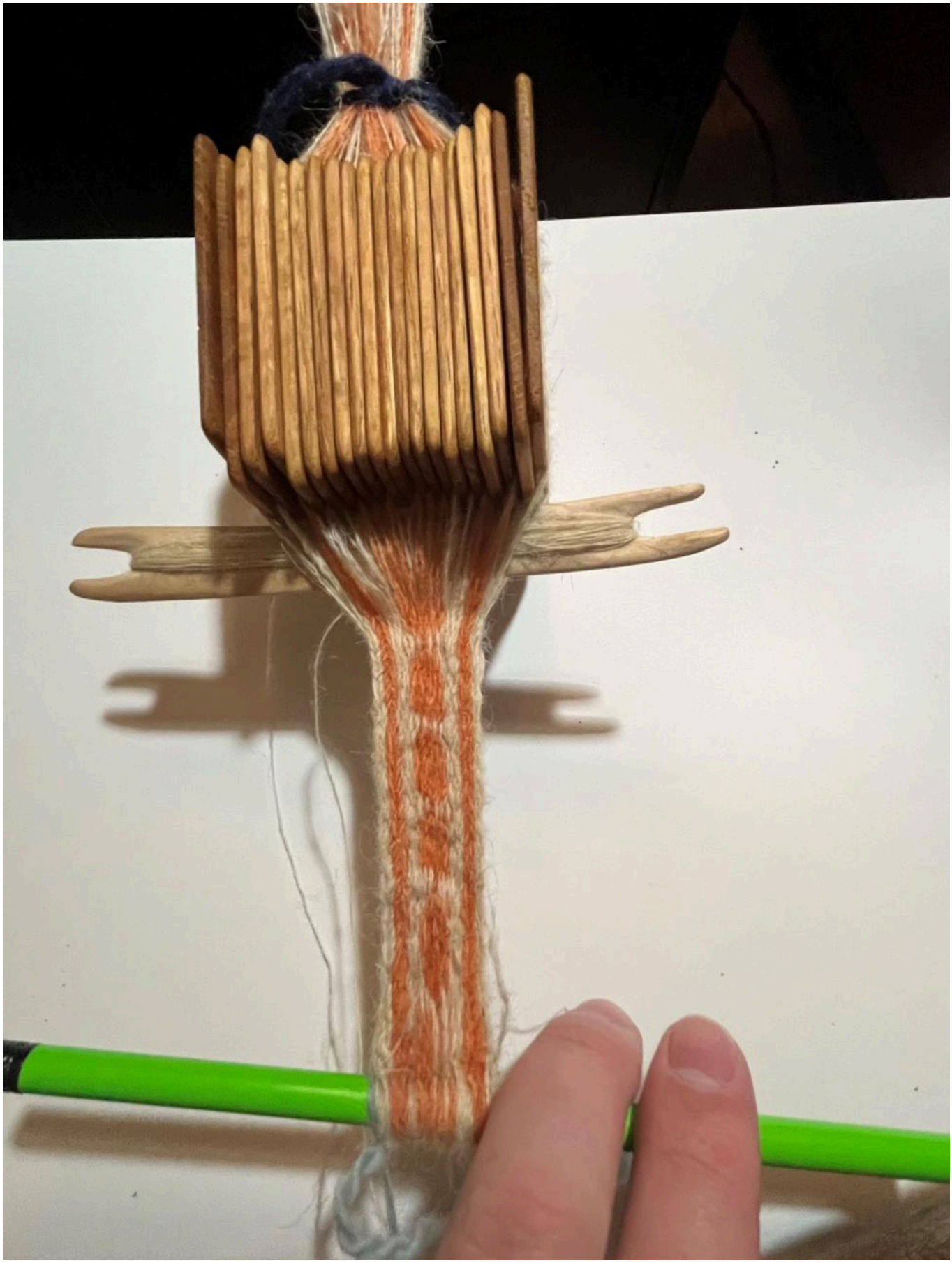

FIG 7. THE WARPED BACKSTRAP LOOM. THESE WARP THREADS ARE UNDER PRESSURE, TIED BETWEEN A POST AND THE WEAVER'S BODY. PHOTO BY: RJ PALMER.

FIG 8. THREE WOODEN SHUTTLES ON THE TOP LEFT, THE ROD AND TABLET WEAVE USED IN BACKSTRAP WEAVING ON THE RIGHT, AND A NEEDLE AND PAIR OF SHEARS ON THE BOTTOM LEFT. THIS PHOTO WAS TAKEN BY THE AUTHOR. PHOTO BY: RJ PALMER

FIG 9. 179 GRAMS OF THREAD, IN SINGLE PLY, SPUN FOR THIS PROJECT. THE SKEINS ARE SEPARATED BY THEIR FINAL COLOR. BEFORE WARPING THE TABLETS, THE YARN WAS MADE INTO DOUBLE PLY YARN. THIS WAS DONE BY SPINNING TWO THREADS OF THE SAME COLOR TOGETHER. PHOTO BY: RJ PALMER.

FIG 10. CIRCLE AND PARALLEL LINE TABLET-WOVEN DESIGN FROM THE RIGHT WALL AULOS PLAYER. PHOTOS BY RJ PALMER, THE TABLET DRAFT WAS CREATED USING TABLET-WEAVING DRAFT DESIGNER.

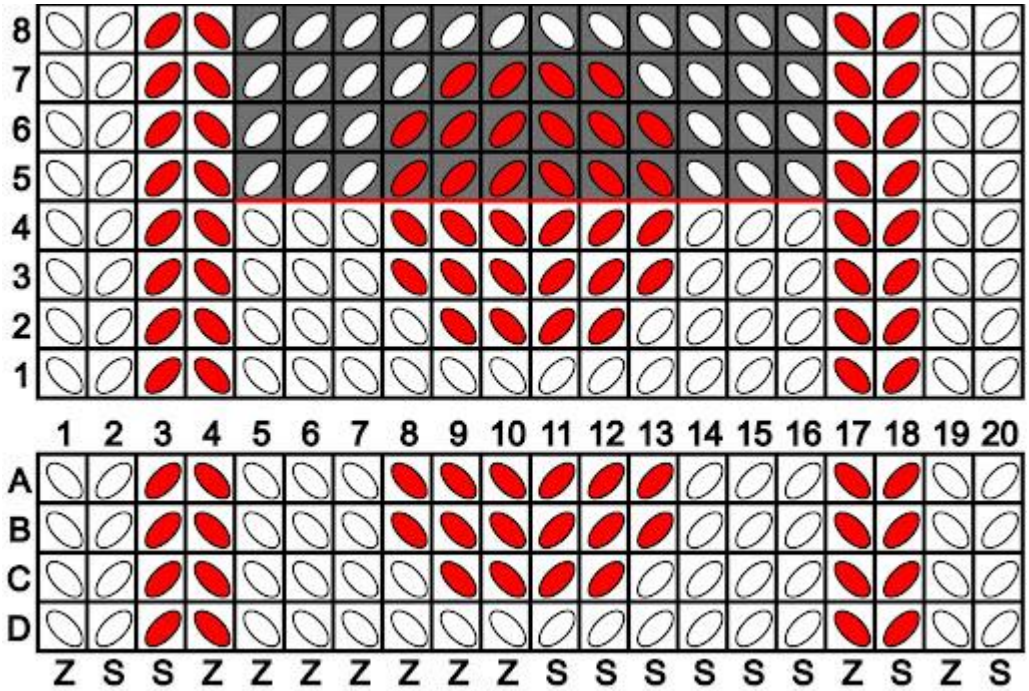

FIG 11. CIRCLE AND PARALLEL LINE TABLET-WOVEN DESIGN FROM THE RIGHT WALL AULOS PLAYER. PHOTOS BY RJ PALMER, THE TABLET DRAFT WAS CREATED USING TABLET-WEAVING DRAFT DESIGNER.

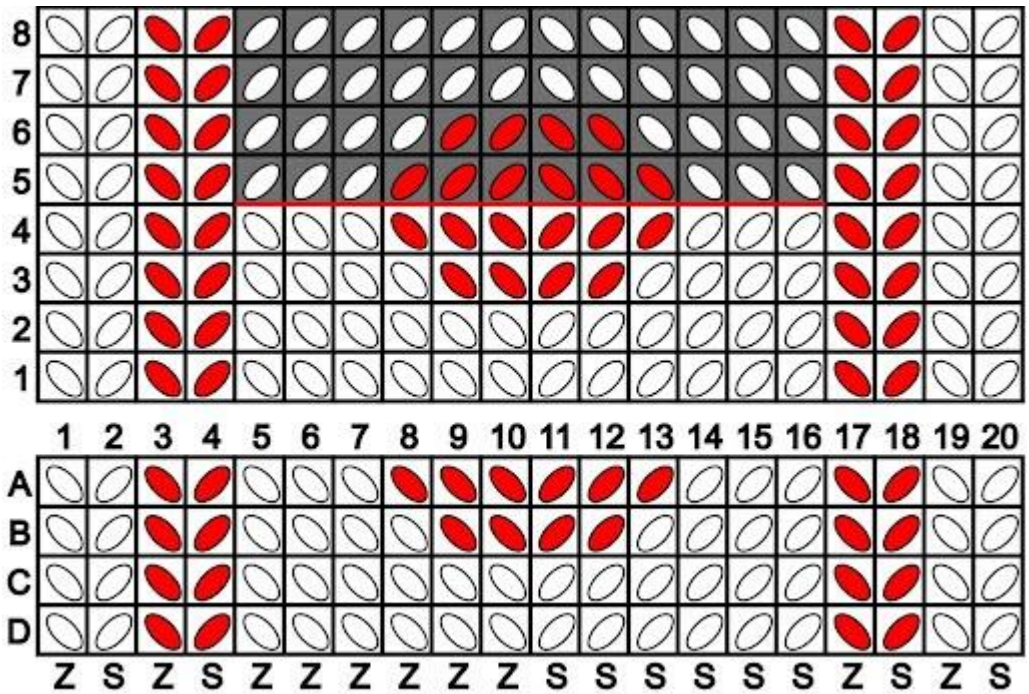

FIG 12. PROPOSED CIRCLE AND PARALLEL LINE TABLET-WOVEN PATTERN. UNTESTED. THE TABLET DRAFT WAS CREATED USING TABLET-WEAVING DRAFT DESIGNER.

FIG 13. TRIANGLE AND LADDER TABLET-WOVEN DESIGN FROM THE LEFT WALL, FIRST DANCER. PHOTOS BY RJ PALMER, THE TABLET DRAFT WAS CREATED USING TABLET-WEAVING DRAFT DESIGNER.

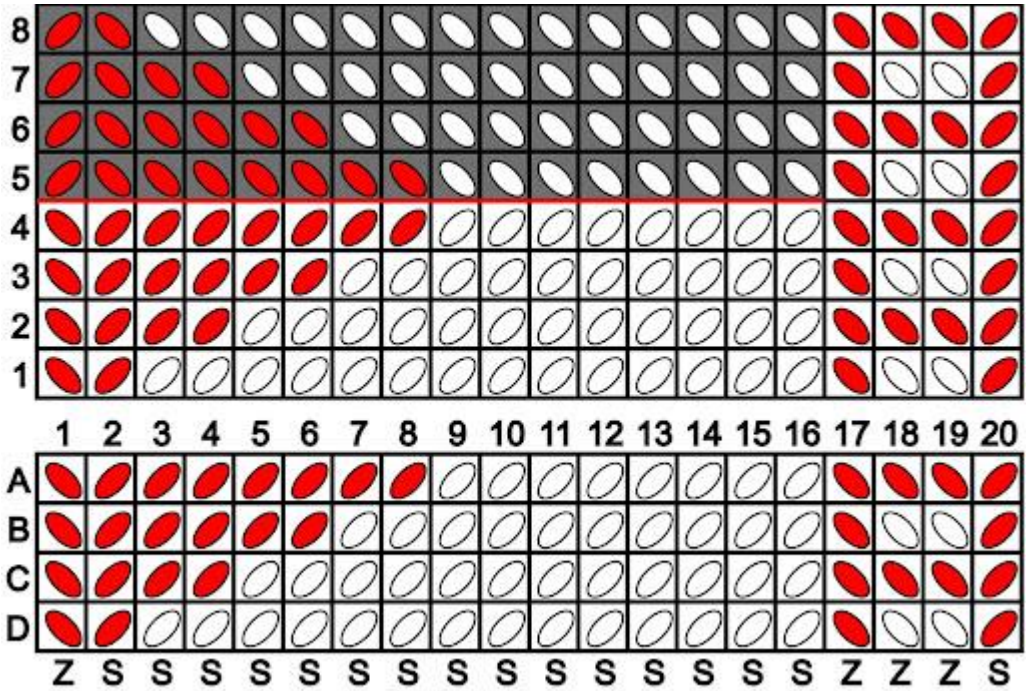

FIG 14. TRIANGLE AND LADDER TABLET-WOVEN DESIGN FROM THE LEFT WALL, FIRST DANCER. PHOTOS BY RJ PALMER, THE TABLET DRAFT WAS CREATED USING TABLET-WEAVING DRAFT DESIGNER.

FIG 15. ZIG ZAG PATTERN FOR INDEPENDENT BELT IN THE TOMB OF THE TRICLINIUM. PHOTOS BY RJ PALMER, THE TABLET DRAFT WAS CREATED USING TABLET-WEAVING DRAFT DESIGNER

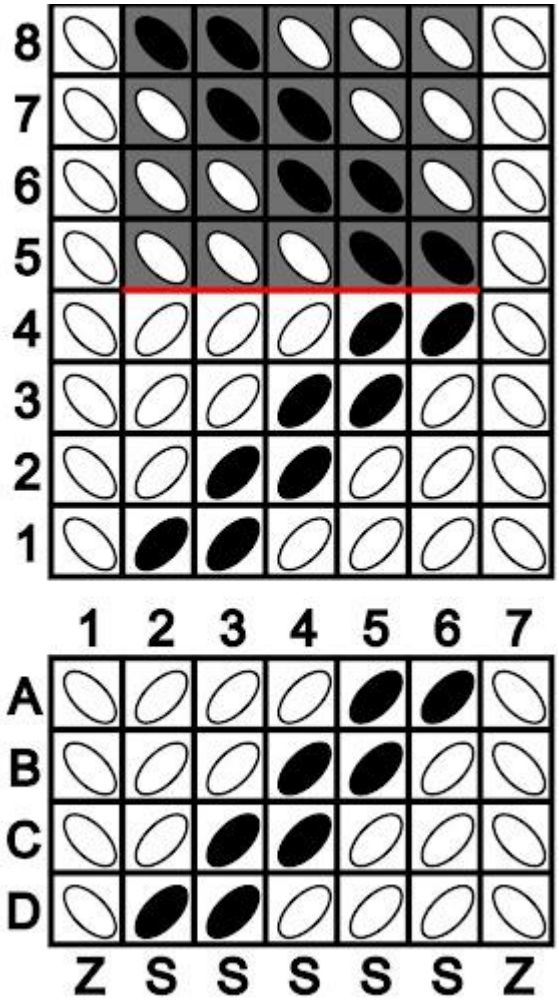

FIG 16. ZIG ZAG PATTERN FOR INDEPENDENT BELT IN THE TOMB OF THE TRICLINIUM. PHOTOS BY RJ PALMER, THE TABLET DRAFT WAS CREATED USING TABLET-WEAVING DRAFT DESIGNER

FIG 17. SQUARE SNAKE TABLET-WOVEN PATTERN FROM TOM OF THE TRICLINIUM WITH WIDE OUTER BORDER. PHOTOS BY RJ PALMER, THE TABLET DRAFT WAS CREATED USING TABLET-WEAVING DRAFT DESIGNER.

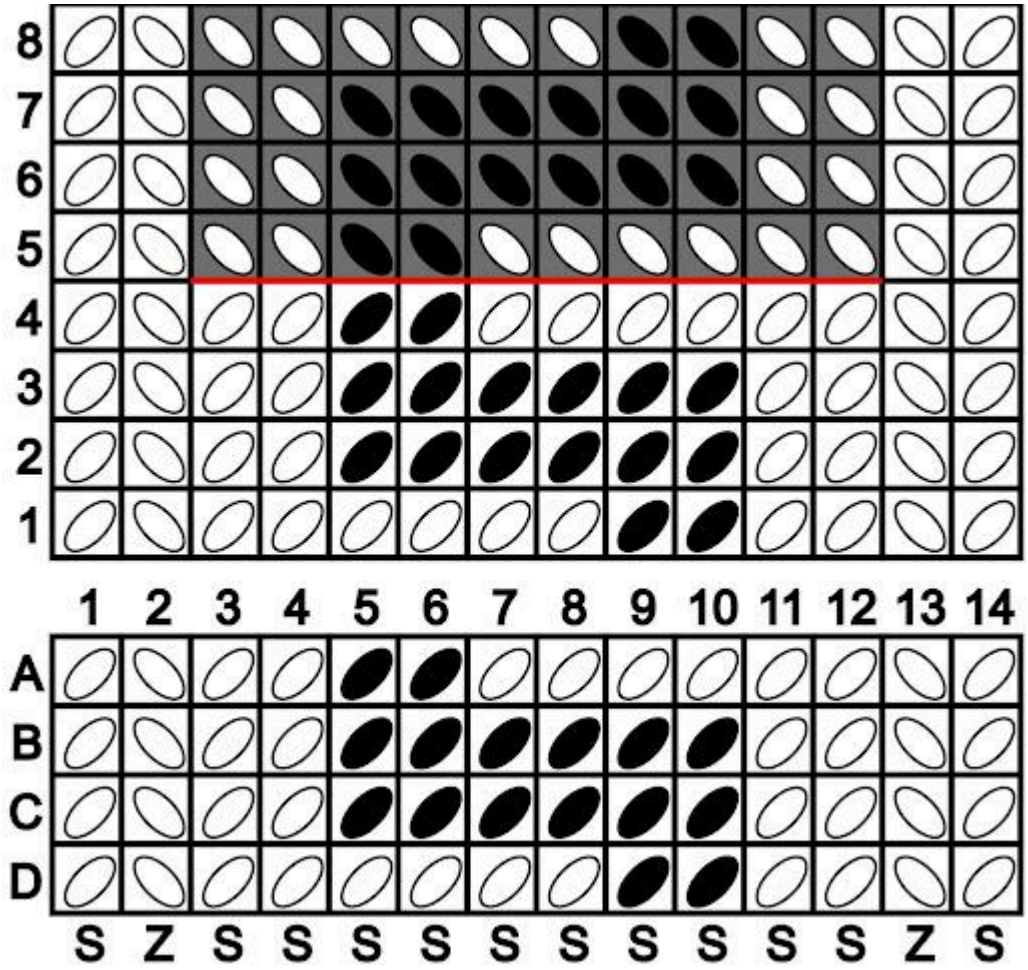

FIG 18. SQUARE SNAKE TABLET-WOVEN PATTERN FROM TOM OF THE TRICLINIUM WITH WIDE OUTER BORDER. PHOTOS BY RJ PALMER, THE TABLET DRAFT WAS CREATED USING TABLET-WEAVING DRAFT DESIGNER.

FIG 19. PURE MADDER TABLET-WOVEN PATTERN BASED OFF OF THE TOMB OF THE TRICLINIUM AND FINDS FROM VERUCCHIO. SINGLE PLY. PHOTOS BY RJ PALMER, THE TABLET DRAFT WAS CREATED USING TABLET-WEAVING DRAFT DESIGNER

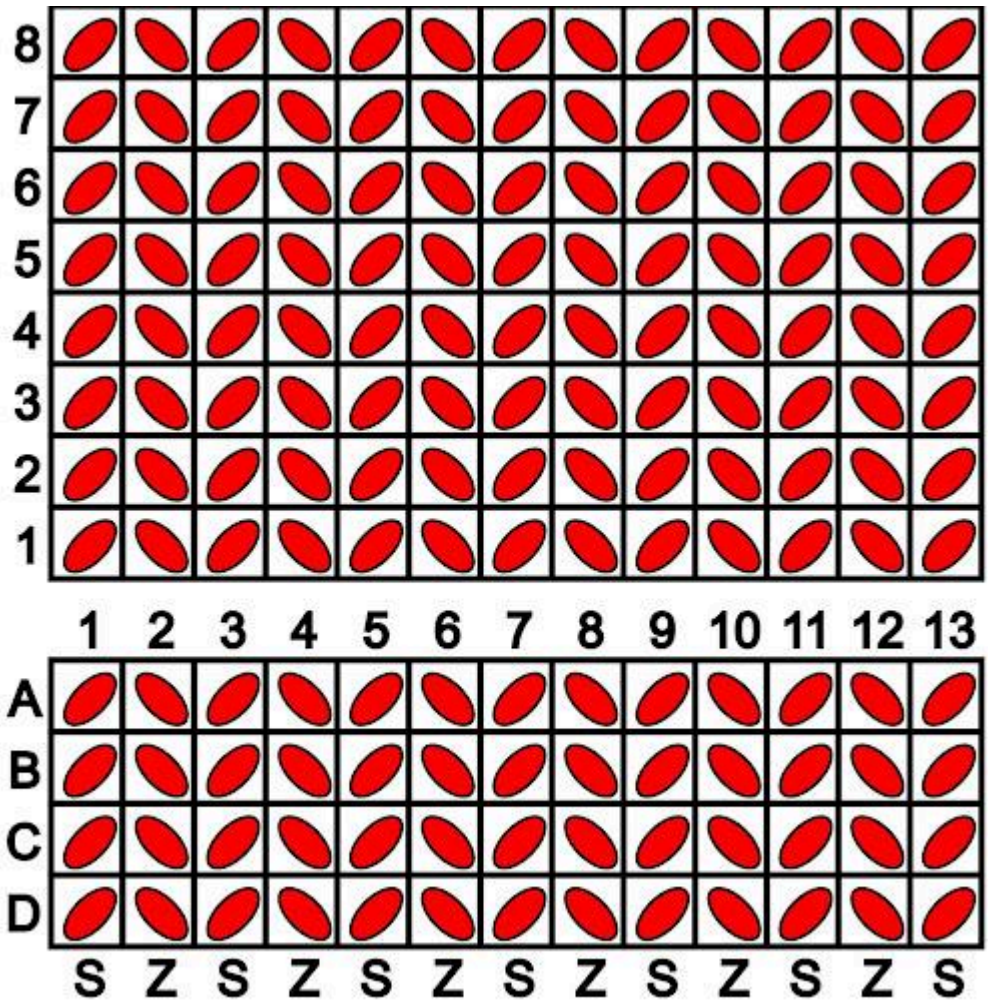

FIG 20. FIG 19. PURE MADDER TABLET-WOVEN PATTERN BASED OFF OF THE TOMB OF THE TRICLINIUM AND FINDS FROM VERUCCHIO. SINGLE PLY. PHOTOS BY RJ PALMER, THE TABLET DRAFT WAS CREATED USING TABLET-WEAVING DRAFT DESIGNER